

Hakalau Forest National Wildlife Refuge

Aloha,

Endangered forest birds and plants need your help!

Hawaii's biota is among the planet's most unique and also some of the most imperiled. Many of Hawaii's native birds, plants, and other wildlife are on the brink of extinction. Widespread habitat disturbance/loss, invasive plants and animals, and in particular lethal mosquito borne avian diseases, have had devastating impacts on Hawaiian ecosystems. Now climate change has made the higher altitudes on both Kauai and Maui easily accessible for mosquitoes, hence the recent further population declines in endemic bird species.



Hawaii's numerous environmental challenges may seem insurmountable, however there is hope. Hakalau Forest National Wildlife Refuge (NWR), on Hawaii Island, is one of the most successfully managed sites for endangered species restoration to date. Hakalau Forest National Wildlife Refuge was established in 1985 to conserve endangered plants and animals and the native ecosystems of which they are a part. Since establishment, the Refuge has made great strides towards protecting precious endemic forest birds and other species by fencing large areas of the refuge and removing feral ungulates, controlling invasive plant species, and restoring native koa-`ōhi`a forest on former ranch lands that had been virtually denuded of forest by grazing cattle. More than 558,000 endemic plants, including 30,000 individuals of several endangered species, were out-planted to the understory and endangered forest birds like the `Akiapōlā`au, `I`iwi and `Alawī have moved into these recovering forests to once again utilize these resources critical to their survival.

In 1990 a native mint, a single *Phyllostegia brevidens* plant, was discovered on the refuge. It had been last seen in 1878. With the expertise of the refuge horticulturist and volunteers, over 500 individuals of this plant have been out-planted on the refuge, saving it from certain extinction.

Recently a new threat to Hakalau Forest NWR has been identified. Feral sheep/Mouflon hybrids have moved from higher elevations and have been seen to jump the refuge fences, threatening the newly planted forest habitat.

The Refuge is now the only location in Hawaii where endangered forest bird numbers are stable or increasing. The 48,163 acres of Hakalau Forest NWR provide important habitat for 29 critically endangered species including seven birds, one insect, one mammal and 20 plants found only in Hawaii. Although Hakalau Forest NWR is located high on the slopes of Mauna Kea on Hawaii

Island, recent climate change models predict its endangered birds will soon face the same threats of avian disease that have impacted these species at lower elevations. The need for assertive restoration work has never been more urgent!



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What we are striving to do:

The Friends of Hakalau Forest NWR (FOHF) was established in 2006 to partner with the Refuge to support the U.S. Fish and Wildlife Service's efforts to preserve native Hawaiian forest ecosystems. Our goal is to establish a stable source of funding to support the long-term land management mission of the refuge. The Friends of Hakalau Forest NWR created an endowment in 2015 (managed by the Hawaii Community Foundation) with a long-term goal to raise funds to support conservation activities on the Refuge. Our current initiative is to increase the existing endowment that currently stands at \$510,000 by \$150,000 by December 31, 2021. At this time, we have pledges totaling \$75,000 and we are seeking matching funds to raise a total of \$150,000 by the end of this year.



'Alawī



'Apapane

A prime example of how the endowment might make vital contributions to managing the refuge is the work to address the threat of mosquitos and the diseases they carry. Dr. Patrick Hart, a professor with the Department of Biology at the University of Hawaii at Hilo and his team started an early warning surveillance system at Hakalau Forest NWR in mid-2020 to monitor mosquito populations, fine-scale changes in temperature, outbreaks of avian malaria and bird responses. Fortunately, the team's initial findings along two transects between 3,900' – 5,100' elevations indicate low mosquito concentrations at present. Future plans call for monthly monitoring of mosquitoes and capturing birds at various elevations to obtain blood samples to detect incipient outbreaks of disease. For the first time Hakalau Forest NWR will be able to use these important research findings to anticipate mosquito threats and respond swiftly with proven mosquito controls throughout the entire refuge. Currently this work is being supported by the U.S. Fish and Wildlife Service and the University of Hawaii at Hilo.

Will you make a special gift today to support Hakalau Forest's endangered birds?

Can you help us help the birds and their habitats? A stable and robust endowment is essential to provide a reliable source of funds for the foreseeable future to support the many necessary conservation activities on the refuge. Your gift will ensure Hakalau Forest's endangered birds have a future for generations to come. Once the Endowment is fully funded, the Friends of Hakalau Forest NWR will be able to support projects like that initiated by Dr. Patrick Hart, as described above. In addition, the Endowment's funds could be used to maintain and expand existing fencing, to support native plant propagation and planting, and control non-native species to conserve the integrity and diversity of the Refuge's native ecosystems.



Volunteers planting koa



Protected forest (on the left); a stark example of the damage caused by feral animals and the importance of secure fencing.

Why should you contribute, and why now?

Your gift will leave a legacy to preserve our endemic forest birds and the truly unique forests in which they are found. It comes at a time when threats are increasing rapidly and will support a management program that will mitigate or eliminate those threats before they can impact the native species of Hakalau Forest NWR and the ecosystem that they call home. A robust endowment is essential. The endowment will be able to provide funds when Government funding is not adequate to continually protect Hakalau's resources. Reliance on uncertain Federal appropriations from year to next year will seriously jeopardize the success of highly effective refuge management programs at Hakalau Forest NWR. Make a positive difference for Hakalau Forest's endemic species for the foreseeable future. While our goal for this current initiative is \$150,000 we will happily accept all donations that could accelerate us to our long-term goal. The challenges are only increasing so the faster we can reach our goals, the sooner we can achieve all of our intentions to help with the vital management needs of this incredible place.

For more details on the endowment, please visit our website, www.friendsofhakalauforest.org and look at the bottom of the home page for the link to the endowment fund page.



ʻAkiapōlāʻau, a rare endemic bird on the Big Island

